Distributed Multicast Caching Technique

ABSTRACT OF THE DISCLOSURE:

A caching arrangement for the content of multicast transmission across a data network utilizes a first cache which receives content from one or more content providers. Using the REMADE protocol, the first cache constructs a group directory. The first cache forms the root of a multilevel hierarchical tree. In accordance with configuration parameters, the first cache transmits the group directory to a plurality of subsidiary caches. The subsidiary caches may reorganize the group directory, and relay it to a lower level of subsidiary caches. The process is recursive, until a multicast group of end-user clients is reached. Requests for content by the end-user clients are received by the lowest level cache, and forwarded as necessary to higher levels in the hierarchy. The content is then returned to the requestors. Various levels of caches retain the group directory and content according to configuration options, which can be adaptive to changing conditions such as demand, loading, and the like. The behavior of the caches may optionally be modified by the policies of the content providers.